MISCELLANEOUS PUBLICATIONS 53
TEXAS AGRICULTURAL EXPERIMENT STATION—THE TEXAS A&M COLLEGE SYSTEM
R. D. Lewis, Director, College Station, Texas, May 22, 1950

COOL SEASON GRASSES FOR NORTH-CENTRAL TEXAS

D. I. Dudley, Superintendent,
Substation No. 6, Denton, Texas

The need for cool season perennial grasses that will aid in carrying the livestock load on North-central Texas farms and ranches from December through April is continually called to our attention by livestock producers of the area. Analyses of most summer grasses show that by December 1 their protein content is well below 6.5 percent, which is considered the minimum content for satisfactory livestock gains. The low winter protein content of our summer grasses is largely responsible for the large loss in weight our cattle take each winter. It is quite common for beef cattle weighing 1,000 pounds December 1, to graze the same pasture until April 1 and weigh 200 pounds less. This happens even with animals being fed some protein supplement and hay. The loss in live weight with the usual cost for winter feeding in North-central Texas make this a period of major importance to the economy of the entire area.

Work at the Denton station indicates there are several promising perennial grasses that flourish during the winter. Such grasses are usually referred to as cool season grasses. They afford highly nutritious and palatable grazing at a time when our summer grasses are dormant, low in protein and often times unpalatable. Many such grasses are now being tested at the station under simulated grazing conditions. That is, they are being clipped periodically and the clippings weighed to determine the comparative yield per acre. Results of the 1948-49 clippings are given in Table 1.

It appears that for most satisfactory performance these grasess should be planted on well prepared crop land. Seeding should be done in September or early October, using a grain drill with a small seed attachment. Under normal conditions these grasses will be ready to graze by December and should afford grazing until May. By that time summer perennials are affording nutritious grazing and can carry the pasture load.

The real value of any cool season perennial grass is largely determined by its ability to produce large quantities of palatable and nutritious grazing during the winter months, and by its summer hardiness, or faculty for withstanding the dry summers and thus perform as a true perennial.

Cool season grasses, although very winter hardy, often cannot take the hot dry summers of this area. Should rains be favorable, however, certain of these grasses may survive the summers and be ready for grazing again by November. More information relative to summer survival and performance in subsequent years will be reported later as more data are obtained.

Several grass samples were taken from our observational nursery January 25 and analyzed for protein content by the State Chemist. Both warm and cool season grasses were selected to compare their feeding value as of that date. The grasses and their protein content in percentages were: Little bluestem 2.70; K. R. Bluestem 3.30; Bermuda (Coastal) 5.00; buffalo 6.05; Kentucky fescue 12.30 and Western wheatgrass 12.50. The latter two are cool season grasses, green, palatable, succulent, and high in vitamin A

Table 1. Yield of cool season grasses, Denton, 1948-49

Strain	Clippings, pounds air dry forage per acre[1]				Total pounds green-weight per acre for season
	April 28	May 27	July 7	Total[3]	
Lincoln brome	783	1412	675	2871	12,673
Achenbach brome	992	1560	537	3089	12,292
Harding grass	634	1278	551	2463	13,326
Texas bluegrass	No stand			None	None
Alta fescue	1081	1615	468	3164	14,455
Alta 144 fescue	942	1485	636	3063	15,804
Kentucky 31 fescue	1116	1589	540	3245	15,629
Orchard grass	829	1288	405	2522	11,720
Texas 46 Rescue[2]	1447	1584	644	3485	15,242
Int. wheatgrass	512	1136	351	1999	8,183
Ranger oats[2]	2325	1238	---	3563	17,669
Italian rye[2]	1750	1862	54	3666	21,440

1/ No grasses emerged until February due to extremely dry weather.
2/ Annuals used for comparison.
3/ Difference required for significance between strains for total air dry forage yield = 663 at 5% level and 887 at 1% level.

and protein when summer grasses are tough and low in vitamins and protein. These data may partially account for the lack of winter gains in cattle when grazing abundant quantities of summer-grown forage.

Our work to date indicates Alta 144 fescue, Harding grass and Kentucky 31 fescue are perhaps the better adapted strains in this test for the North-central Texas area. Alta 144 fescue, a selection from Alta fescue, has proved the best performer of the fescues. A satisfactory stand was readily obtained, it produced a good amount of forage, survived the summer and indicates fair yields the second winter. Harding grass appears subject to winter killing when young, but very hardy the second winter. This grass produces a very rugged growth of foliage that may be slightly tough. Seed of Kentucky 31 fescue is readily obtained on the market and is satisfactory for this area. Our work indicates it will not stand grazing too close and late. All strains in this test were clipped extremely close and perhaps later than advisable.

A report on cool season grasses from this station would not be complete without mention of Western wheatgrass although not included in this particular study. For several years we have had under observation at the station what may be three different strains of Western wheatgrass. These are identified as "hard land," "sand land" and as just Western wheatgrass. With every planting, Western wheatgrass has been slow to establish itself, a full year being required. However, once established it appears very rugged and perhaps most likely to maintain itself in the open pasture in competition with weeds and other grasses. Plantings made at the station in 36-inch rows in the spring of 1948 are now solid from row to row (2 years) and runners are firmly established 6 to 8 feet from the outside rows. This grass is a free seeder and also spreads from runners. Western wheatgrass appears tough and unpalatable, but it is readily grazed by cattle and has a high protein content.

Italian rye (an annual) was placed in the test for comparison and, as usual, produced a large amount of good quality, high protein forage. It is also a free seeder and the seed combines readily. If cool season annuals are to be considered in a grazing program, Italian rye should not be overlooked in North-central Texas.

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